

IN THE CLAIMS:

The present listing of claims replaces all prior versions, and listings of claims in the application.

1. (Currently Amended) ~~Ceramic~~ A ceramic material[[,]] ~~characterized in that it comprising,~~

0.2 to 5 wt.% of carbon particles having a maximum particle size of 5 μm ,
wherein said ceramic material has,

an HV10 hardness of not more than 15.5 GPa₁ and

an E modulus at room temperature of less than 330 GPa ~~and contains 0.2 to 5 wt.% of carbon particles, the carbon particles having a maximum particle size of 5 μm .~~

2. (Currently Amended) ~~Ceramic material according to claim~~ The ceramic material of Claim 1[[,]] ~~characterized in that the content of carbon particles is wherein said ceramic material comprises 0.2 to 3 wt.% of carbon particles.~~

3. (Currently Amended) ~~Ceramic material according to claims 1 to 2, characterized in that the~~ The ceramic material of Claim 1 wherein said ceramic material has a density of the material corresponds corresponding to at least 98.5 % of the theoretical density.

4. (Currently Amended) ~~Ceramic material according to claims 1 to 3, characterized in that it~~ The ceramic material of Claim 1 where said ceramic material has:

an RT flexural strength of at least 750 MPa,

a fracture toughness of at least 5.5 Mpa m^{1/2}₁ and

a Poisson ratio or transverse contraction coefficient at 25 °C of ≤ 0.3 .

5. (Currently Amended) ~~Ceramic material according to claims 1 to 4, characterized in that it~~ The ceramic material of Claim 1 wherein said ceramic material has no is free of at least one of macroscopic defects larger than 20 μm and[[/or]] optical heterogeneities larger than 50 μm .

6. (Currently Amended) ~~Ceramic material according to claims 1 to 5,~~
~~characterized in that it~~ The ceramic material of Claim 1 wherein said ceramic
material is a material based on selected from the group consisting of silicon nitride
ceramic material ~~or and~~ zirconium dioxide ceramic material.

7. (Currently Amended) ~~Ceramic material according to one of claims 1 to 6,~~
~~characterized in that it~~ The ceramic material of Claim 6 wherein said ceramic
material is a material based on silicon nitride ceramic material and the ceramic
material additionally further comprises particles of at least one of carbide, nitride,
carbonitride, boride and ~~[[/or]]~~ silicide compounds
of elements of groups IVB, VB and VIB of the periodic table, or
of silicon, ~~[[and/]]~~or
of iron,
further wherein said particles have a the maximum size thereof that does not exceed
10 μm , and the maximum concentration ~~thereof~~ of said particles is < 50 vol.%.

8. (Currently Amended) ~~Process for the preparation of~~ A process of
preparing a ceramic material according to one of claims 1 to 7, wherein comprising
0.2 to 5 wt.% of carbon particles having a maximum particle size of 5 μm ,
wherein said ceramic material has, an HV10 hardness of not more than 15.5
GPa, and an E modulus at room temperature of less than 330 GPa,
said process comprising the steps of:
providing raw materials;
subjecting the raw materials are subjected to wet grinding thereby forming wet
ground raw materials; and
adding one or more organic additives are added to said wet ground raw
materials, thereby forming intermediate wet ground materials;[[.]] and
then subjected to drying and granulation; drying and granulating the
intermediate wet ground materials; and
shaping the dried and granulated intermediate wet ground materials by

~~means of~~ heating and sintering ~~through heating~~ of the organic additives and a sintering process, characterized in that the ~~wherein process~~ conditions are ~~chosen~~ selected such that carbon particles are separated out, and said ceramic material is free of at least one of the macroscopic defects larger than 20 µm and ~~and~~ optical heterogeneities larger than 50 µm ~~are formed~~.

9. (Currently Amended) ~~Process according to claim~~ The process of Claim 8 characterized in that ~~further comprising to avoid the formation of macroscopic defects larger than 20 µm and/or optical heterogeneities larger than 50 µm, the sieving a suspension, formed during wet grinding, is sieved over a magnetic separator and a fine sieve/fine filter having a maximum sieve opening/filter pore size of 50 µm.~~

10. (Currently Amended) ~~Process according to claim 9, characterized in that~~ The process of Claim 9 wherein said raw materials comprise Si₃N₄ powder, and sintering auxiliaries ~~as raw materials, and optionally with the addition of a dispersing auxiliary, and said organic additives are selected from at least one member of the group consisting of polyacrylates, polyvinyl alcohols, polyglycols and polyvinylpyrrolidone,~~ said process further comprising,

forming said raw materials ~~are processed into a slip, the slip is subjected to wet grinding the slip, and polyacrylates, polyvinyl alcohols, polyglycols and/or polyvinylpyrrolidone are added~~ adding said organic additives to the slip as organic additives, thereby forming a the mixture formed is then subjected to a

drying the mixture ~~and granulation and a shaping, the drying being carried out at temperatures below 200 °C,~~

granulating the dried mixture,

shaping the granulated and dried mixture ~~the organic additives are then heated by heating~~ thoroughly at temperatures of between 100 and 400 °C for a duration of 0.5 to 4 h in air, or between 100 and 800 °C for a duration of 0.5 to 4 h in

an inert atmosphere or in vacuo, thereby forming a shaped body, and~~[[,]] finally,~~
sintering the thoroughly heated shaped body formed is sintered in by means
of a two-stage process comprising a first stage and a second stage[[,]] wherein
in the first stage the shaped body is treated for 0.5 to 5 h at a
temperature of up to 2,000 °C under an N₂ or inert gas pressure of 1 to
50 bar, and
in the second stage ~~it~~ the shaped body is treated for 0.5 to 2.5 h
at a temperature of up to 2,000 °C under an N₂ or inert gas pressure of
50 to 2,500 bar.

11. (Currently Amended) ~~Process according to claim 8 or 9, characterized in~~
~~that~~ The process of Claim 9 wherein said raw materials comprise ZrO₂ powder, and
~~sintering auxiliaries, as raw materials, optionally with the addition of~~ and optionally a
~~dispersing auxiliary, and said organic additives comprise at least one member of the~~
group consisting of polyacrylates, polyvinyl alcohols, polyglycols and/or
polyvinylpyrrolidone,

said process further comprising,

processing said raw materials are processed into a slip,
~~the slip is subjected to wet grinding~~ the slip, and
~~polyacrylates, polyvinyl alcohols, polyglycols and/or polyvinylpyrrolidone are~~
~~added~~ adding said organic additives to the slip, as organic additives, the thereby
forming a mixture, formed is then subjected to a

drying the mixture and granulation and a shaping, the drying being carried out
at temperatures below 250°C,

granulating the dried mixture,

shaping the dried and granulated mixture ~~the organic additives are then~~
~~heated by heating~~ thoroughly at temperatures of between 100 and 400 °C for a
duration of 0.5 to 4 h in air, or between 100 and 800 °C for a duration of 0.5 to 4 h in
an inert atmosphere or in vacuo, thereby forming a shaped body, and~~[[,]] finally,~~

~~the thoroughly heated shaped body formed is sintered~~ sintering the shaped
body in a two-stage process comprising a first stage and a second stage, wherein

in the first stage the shaped body is treated for 0.5 to 5 h at a

temperature of up to 1,700°C under an N₂ or inert gas pressure of 1 to 50 bar, and

in the second stage ~~it~~ the shaped body is treated for 0.5 to 2.5 h at a temperature of up to 1,700°C under an N₂ or inert gas pressure of 50 to 2,500 bar.

12. (Currently Amended) ~~Use of a~~ An article of manufacture comprising the ceramic material of Claim 1 according to one of claims 1 to 7 as wherein said article of manufacture is selected from the group consisting of bearing roller bodies, engine valves and tool inserts in bearings and other components subjected to impact as well as shaped articles.